M/015/075

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To:	Tony Gallegos	**Date:**	September 30, 1999
Fax #:	(801) 359-3940	**Pages:**	20 (w/cover)
From:	Brent Northrup		
Subject:	U.S. Gypsum San Rafael Quarry Project		

Comments: As discussed in our telephone conversation today, I have attached a copy of our response to the Plan of Operations (POO) submitted by U.S. Gypsum for the San Rafael Quarry Project. We are waiting for U.S. Gypsum to rectify the deficiencies identified in the POO before proceeding with preparing an Environmental Impact Statement. I have been selected as the Team Leader for the project and will be the BLM's point of contact. I will keep you informed on the status of the project. If you have any questions or concerns, please let me know.

Brent Northrup

M/015/075

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JUL 31 1998

Brian Tilley
United States Gypsum Company
P. O. Box 570160
81 North State
Sigurd, Utah 84657

Dear Mr. Tilley:

Enclosed is our completed review of the Plan of Operations (POO) and Technical Report (TR) submitted to this office by United States Gypsum Company (USG) on June 9, 1998. The changes or additions identified in the POO must be corrected and accepted by the Bureau of Land Management (BLM) before we proceed with preparing an Environmental Impact Statement (EIS). The changes or additions identified in the TR should be corrected and incorporated into the draft EIS prepared by TRC Mariah Associates, Inc.

As submitted, the POO is supported by the TR. The POO should serve as a stand-alone document which can be incorporated into the proposed action for the draft EIS. The POO currently consists of information found in the POO, the proposed action in the TR, the Reclamation Plan in the TR, and the Monitoring Plan in the TR. This information should all be consolidated into the POO.

Access to the mining claims was proposed by a right-of-way application. However, we have determined that a right-of-way application would be inappropriate. The right of **reasonable** access to a mining claim is provided by the Mining Law of 1872 and subject to the regulations at 43 CFR 3809. Although the claimant has the right of access, under these regulations, the Bureau of Land Management has the authority to approve the route and method of access so as to minimize the surface disturbance. Access to a mining claim is a nondiscretionary right of the miner and is not subject to a right-of-way. Under the Federal Regulations at 43 CFR 2808, the applicant of a right-of-way application shall reimburse the BLM for the costs incurred in processing the application including compliance with the National Environmental Policy Act of 1969. There is no authority for cost reimbursement under the regulations at 43 CFR 3809. Therefore, USG should incorporate the detailed plans for improvement, construction, and reclamation of the proposed access route to the mining claims into the POO.

According to the POO and TR, USG conducted exploration drilling in the proposed project area in 1994 and 1996. The proposed project area involves about 1,600 acres of public lands. As a result of the exploration, a proposed quarry site was identified on about 107 acres north of Kimball Draw. Our review of the POO and TR indicates that there may be a another potential quarry site in the proposed project area to the south of Kimball Draw. In Chapter 2 of the TR, Nature of the Gypsum Reserves, it is stated that "the data indicate there is a quality gypsum resource in excess of 40 million tons in the proposed project area". Also, in Chapter 4 of the TR, Proposed Wilderness Lands, it is stated that "it could be possible to avoid direct impacts to the Devil's Canyon Unit if mining were to begin in the areas south of Kimball Draw".

Consequently, the exploration drilling conducted has raised several questions which need to be addressed by USG before we proceed with preparing an EIS? These questions are as follows:

1) What were the results of the reconnaissance exploration drilling conducted in 1994 within the proposed project area?

2) Why was the exploration drilling conducted in 1996 concentrated around the proposed quarry site?

3) What were the geologic factors for selecting the proposed quarry site and eliminating all the other gypsum resources within the proposed project area from consideration as a potential quarry site?

4) Based on the drilling conducted, is there another potential quarry site within the proposed project area to the south of Kimball Draw?

If you have any questions regarding our review of the POO and TR, please contact Brent Northrup at (435) 259-2151.

Sincerely,

Orig. Signed by Richard L. Manus

Richard L. Manus
Field Manager

Enclosure
BLM Review of the POO and TR (17 pp)

cc: Karyn Classi (w/Enclosure)
TRC Mariah Associates, Inc.
605 Skyline Drive
Laramie, Wyoming 82070-8909

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M/015/075

REVIEW OF U.S. GYPSUM PLAN OF OPERATIONS AND TECHNICAL REPORT

General Comments

Impacts on and from traffic levels on I-70, e.g. increase in accident rate, fatalities, etc. from the transport of gypsum have been ignored. They are a major issue and must be addressed.

The impacts of noise on other resources have not been adequately addressed. Need additional data such as a raptor nest survey, to adequately address the impacts. The description of the alternatives should provide more information on the levels and frequency of noise that would be generated, and the area that would be affected by noise should be defined. The analysis states that noise could travel a few miles. Contrary to the conclusions that only small portions of adjacent WSAs would be affected by noise, a three mile radius of noise would impact opportunities for solitude on over half of the Devils Canyon WSA.

The document would benefit from interdisciplinary interaction and tracking of the description of the affected environment and the environmentsl consequences. For example, the wild horse section talks about a seep not mentioned in the water section. The water section mentions a wetland in the project area, but it is not descussed in the vegetation section. Impacts on game animals from transporting the gypsum are analyzed in cumulative impacts but not in the direct and indirect impact analysis.

More definition is needed for the various "areas" referred to in the description of the affected environment and the environmental consequences. Make a distinction between "project area" or "claim area", "shale area", etc.

The access road route is an issue and should be analyzed independently from the "project area" or "claim area".

More documentation and citation on the sources of information and analysis is needed. Since this is a BLM document, personal communication with BLM employees is a weak source. Try to cite published data or government records to support the analysis.

The cumulative impacts section should address the total impact from all projects including the proposed action, not just the anticipated and existing gypsum operations.

The analysis needs to be better quantified and conclusions drawn on the importance of impacts. Remember that the word "significant" can be used in an EIS as long as there is an accompanying explanation as to why an impact would be significant.

Reference to "State owned lands" should be clarified. Are the State Institutional Trust Lands managed by SITLA, or Division of Wildlife or State Lands and Forestry administered land?

PLAN OF OPERATIONS

Claim Information: No acreages are provided for the mining claims held by U.S. Gypsum. Discuss the chain of title of the mining claims. When were the claims located and who were the original locators. When did U.S. Gypsum acquire ownership of the claims?

Location of the Proposed Activity: There is no mention that the project area and the quarry are located on land administered by the State of Utah. What authority does U.S. Gypsum have for conducting mining operations on the land held by the State?

Existing Disturbance and Structures: Where are the existing disturbances and structures? A map should be provided showing existing roads, exploration trails, drill pads, two track trails, and off-highway vehicle trails. What exploration disturbances have been reclaimed and has the reclamation been accepted by the BLM?

Mining Area Geology: 1) Describe the flow of the ephemeral drainages in the project area. What drainages do the drainages in the project area flow into. The Surface Water section of the Technical Report does not adequately describe the drainage of the area and the watershed. 2) The discussion on the geology of the gypsum deposits in the Carmel Formation is confusing. In the Mining Area Geology section it is stated there are three distinct gypsum sequences in the project area. In the Nature of the Gypsum and Gypsum Reserves section of the Technical Report it states that the gypsum occurs as two gently dipping beds. In Exhibit 1 of the Technical Report only the upper gypsum bed is shown to be mined. Provide detailed descriptions of overburden, minable gypsum beds, the quality of the gypsum beds, and the interburden between gypsum beds. Isopach maps should accompany this discussion. Provide a detailed description of the interburden between the lowest minable gypsum bed and the Navajo Formation. Provide a detailed description of the Navajo Formation. Provide a geologic map of the project area.

Description of Proposed Operations: 1) Mine development and sequencing is not clear and is not adequately addressed. How will the initial quarry be developed during the 1st year? How would multiple gypsum beds be mined and how will the interburden between beds be handled? How would waste rock of clastic interbeds within the minable gypsum be handled? Thorougly describe stripping of material, the location of stockpiles, and the direction of mining. How would the size of stockpiles provided on page 2-9 of the Technical Report be affected by the level of production? Estimate the size of the stockpiles based on the different production levels.

The Plan of Operations states that during initial mining, overburden would be stockpiled along the northwestern edge of the project area and that topsoil and overburden would be stockpiled adjacent to, and to the south and east of, the overburden stockpiles. However, in the Reclamation Plan it is stated that topsoil would be spread over the overburden stockpiles along the northwestern edge of the project area and microbiotic crusts would be spread above the topsoil.

As the 2nd area of the quarry is developed during years 2-5, how would the microbiotic crust, topsoil, and overburden stripped from this area be handled? Would this material be stockpiled in this mining area behind the working face or transported to the 1st area for reclamation? Exhibit 1 is an illustration of quarry development. This illustration indicates that topsoil and overburden would be stockpiled in front of the direction of mining and that reclamation would take place as the quarry develops. Mining of the quarry can not progress after the stockpiled material is placed ahead of the working face. A more logical mining sequence would involve mining out the gypsum from the 1st mining area and then moving the operation to the 2nd mining area to begin quarry development. The topsoil and overburden stripped from the 2nd mining area could then be directly transported to the 1st mining area for reclamation. The need for any temporary stockpiles in the active mining area should be discussed. Subsequent mining areas could be developed and reclaimed in the same manner. A map should be provided of typical quarry development in the 2nd mining area showing the working face, the direction of mining, the location of stockpiles, the location of facilities and equipment, and progression of reclamation in the 1st mining area.

Quarry Plan: 1) What is the estimate of recoverable gypsum reserves in the quarry area? Are there sufficient reserves to sustain a 250,000 tons/year mining operation for 25 to 30 years? If the reserves are not adequate and additional exploration is necessary on other claim locations, explain what is necessary to permit the exploration activities. Why isn't exploration occurring now? This could drastically change the proposed action 2) Elaborate on the drilling and blasting cycle. During initial mining 250-300 holes would be drilled and blasted. How many holes would be drilled before blasting took place? Would drilling and blasting occur continuously or periodically during initial mining. Provide an estimate of the drilling and blasting schedule and a sketch of a typical drilling and blasting sequence. As production levels increase, how will the drilling and blasting schedule be affected? Identify the noise and dust emissions at the different levels of blasting 3) The Plan of Operations states that initial mining would not require the storage of blasting components and any changes to this would be approved by the BLM. If blasting components would be stored on site during higher production levels, then the storage and safegaurd of this material should be addressed.

Required Equipment and Facilities: Provide an explanation of how all equipment would be utilized in the mining operation. Estimate the numbers and type of equipment which would be utilized at the different production levels. The horsepower, noise, and air emissions of equipment must be identified to allow adequate noise and air quality impact analysis. Identify the amount of fuel and water required for the different production levels. Identify the number and size of trucks required for haulage of ore, fuel, water, and waste and how many truckloads or round trips per day. Where would sanitary waste be disposed of? Where is the most likely site for solid waste and sanitary waste disposal?

Water Discharge and Treatment: Who would approve a stormwater pollution prevention plan? Measures to prevent stormwater pollution should be incorporated into the Plan of Operations.

Road Construction: The site specific engineering specifications for construction of the road are necessary. Otherwise, the size and number of culverts, cuts, fills, etc. can not be described and the visual impacts can not be adequately addressed. Explain the standards for construction of the access road. Describe in detail how the road would be constructed, the equipment that would be utilized, and the personnel involved. Would fill material, sand, and

gravel be required for road construction? If so, how much of these materials would be required and from where would the materials be supplied?

Employment and Employee Access: What is meant by "local" personnel? What is an outside contractor? Table 2.3 is confusing and requires more explanation. Clarify the personnel required at the different production levels. Explain how a 5 fold increase in the duration of production would result in a 21 fold increase in the level of production. Under footnote 1, the quarry crew would work for 2 months during the first year to produce 60,000 to 70,000 tons of fractured gypsum and would not be required on the site again until the fourth year. How then will 12,000-25,000 tons of gypsum be produced annually during the first 3 years if there would not be anyone on the site.

Hazardous Materials: Herbicide control of weeds is mentioned on page 2.28. Herbicides are hazardous materials which should be identified. What measures would be taken to comply with applicable laws and regulations regarding the handling and storage of hazardous wastes? Would storage require construction of concrete bunkers, berms, liners, double walled tanks, etc.? Explain what is anticipated. This is important to the analysis of VRM, wildlife, and other resources. Who authorizes a Spill Prevention, Control, and Countermeasure Plan? This Plan should be incorporated into the Plan of Operations. The last paragraph on page 2-20 is analysis and should either be explained away as an issue in the scoping section or moved to chapter 4 for full analysis. Table 2.5 should identify the kinds of trucks and vehicles required and the traffic requirements should be tracked with table 2.4. How can an air quality analysis be completed if the quantities of combustion emissions are not estimated?

Life-of-project and Project Time Line: The authorizing action is the approval of a Plan of Operations.

Fire Suppression: Who are the "local fire-fighting authorities that would be notified? What are their capabilities? How far away are they? What would be the response time?

Applicant-committed Practices, Page 2-24: 1) Define the Authorized Officer. 2) What are the BLM Standard Operating Procedures?

Page 2-25: 1) What mitigation would be provided to the two cultural sites identified? 2) How does a properly designed road reduce the potential for big game mortality? How would U.S. Gypsum employees and contractors be instructed to avoid accidental big game mortality? 5) What does "improved" mean for the roads within the Wright fishook cactus habitat? Would this change the previous description of the access road? The anticipated improvement should be described in the text of the proposed action. Would mining stop during Section 7 consultation? Would the project be abandoned if a jeopardy opinion rendered on an as of yet unknown T&E species?

Page 2-26: 1) The commitment to preserve crustal material for microbiotic soils is negated by the word practicable. What does practicable mean in this context? Explain. 2) The commitment to avoid steep slopes needs further explanation. What is considered a steep slope (% slope)? How much of the mine area and access route is on "steep" slopes and on how many acres would avoidance be "feasible"? This measure is not committed as written. 3) How would stockpiles be located in areas to reduce the potential for wind erosion? 4) Best

management practices needs to be defined. 5) Explain the design and placement of erosion control devices.

Page 2-27: 1) The commitment to surface the road with pumice or clinkers doesn't match the surface specification described on page 2-11 for gravel and the control of dust (i.e. petroleum resin, magnesium chloride [which is white] and permazyme. Which description is the proposed action. Define Key Observation Points here. 2) Explain how the road would be designed to follow the existing topography as much as possible and explain the measures which would be taken to minimize the amount of cutting and filling. 3) It is stated that mining would probably begin in Section 21. What is the proposed action? 4) How would the stockpiles be engineered so that the height, width, and contour would effectively screen the quarry and conform to the surrounding landscape. As mining progresses, how would the stockpile be modified to ensure that the quarry is continuously screened?

Page 2-28 & 2-29: 1) What is the appropriate season for reclaiming exploration areas? 2) With the proposed access road, how many channels would be crossed? Where would it not be possible to cross perpendicular to the flow? Are there riparian areas along the proposed route? No riparian areas were identified in the vegetation section of Chapter 3. What are the appropriate species to be used for bank stabilization. Why are crossings mentioned? This section mitigates non-existing impacts and therefore should be either removed or written specifically for this action. Weeds are not listed in Appendix A but are listed in Appendix B. Is hand pulling a mechanical weed control measure? What would plowing of weeds consist of? What crossings would require concrete dips and what crossings would require culverts. Where would the rip rap be excavated? This could be a major issue if it would be from a site outside the area to be mined? No streams are located along the proposed access road in Chapter 3 so why is this mitigation included?

Page 2-30: 1) The Stormwater Pollution Prevention Plan should be incorporated into the proposed action. What are "best management practices"? 2) How would drainages be controlled which extend into the quarry? 3) Define unstable soils and steep slopes for erosion control measures and be specific for the mine area and road as proposed. 4) Are there any raptor nest sites within 0.75 miles of the proposed project and if a nest was identified would it be feasible to only conduct operations outside the nesting season between February 1 through July 31?

Page 2-31: 1) What dust suppression measures would be implemented during blasting and stockpiling? 2) Explain the measures for restricting areas to be blasted at any one time. 3) What dust control techniques would be utilized on stockpiles? 4) The authorizing mechanism is the approved Plan of Operations. 5) For the combustion engines, what is the maximum noise level allowable? What is "excess" noise?

Page 2-32: Why would the area continue to be available for gypsum mining if BLM selected the No Action alternative? If BLM rejects US Gypsum's plan, would it not reject other plans for mining in this location? This page needs separate headings for Alternative Quarry Sites and Alternative Road Routes. At this point BLM is considering routes for a ROW, not separate ROWs.

Table 1.3: Need to explain why the Cox Quarry is "believed" to be too small. Has the site been explored? With the proposed site being 70 to 80 miles from Sigurd, why is the Castle Dale site "too far" at 85 miles. This site appears to be a good alternative for avoiding impacts to cactus, HR 1500, and Wilderness, even if it costs a little more for the Company to haul the ore. Even though the Company doesn't want the site, BLM could analyze the alternative and compare it to the proposed action. The range of alternatives will be intensely scrutinized by those opposing the project and addition of an alternative site would demonstrate that BLM fully explored the alternatives.

Reclamation Plan: Describe the BLM and UDOGM reclamation standards. Are these standards compatible? Identify the bond amount. Explain "best management practices" for erosion control and storm runoff. In the basic reclamation procedures, the replacing of overburden is not included.

Reclamation Schedule: The reclamation schedule is vague. Thoroughly explain Table A.1 and how reclamation will occur in phases. Provide specific details on how development and reclamation will proceed in areas. Maps of the intervals given on Table A.1 should be provided showing the estimated disturbance acreage, the estimated reclamation acreage, and the estimated reclamation release acreage. Are staging areas, roadside construction areas, and exploration areas discussed in the Plan of Operations? Reclamation of the access road is not discussed. What procedures would be utilized for reclaiming the different disturbed areas? Define initial reclamation, interim reclamation, and final reclamation. Explain how stockpiles would be "otherwise stabilized to prevent soil loss".

Microbiotic Crust and Topsoil Salvage Plan: The last paragraph on page A-4 needs clarification. What is initial mining and what area does it involve? Would topsoil and subsoil from initial mining be temporarily stockpiled? Would the overburden stockpile be used to store the topsoil, subsoil, and microbiotic crust that was removed from the first mining area and temporarily stockpiled? If additional material is needed to complete reclamation and would be taken from the overburden stockpile, would this stockpile be replaced to maintain a visual barrier? Why would it not be possible to haul microbiotic crust and topsoil directly to the reclaim area. If it is not possible, where and how would these materials be temporarily stockpiled?

Recontouring and Regrading: Explain how overburden would be replaced and how areas would be recountoured to blend with the surrounding topography. How would drainage patterns be restored and channels reconstructed? On page A-5 it is stated that all slopes would be contoured to 3:1 or less; however, Exhibit 1 shows a 2:1 slope.

Revegetation Plan:

Soil Replacement and Tilling Procedures: Explain how waste rock or subsoil surfaces would be left "rough". What slopes are too steep to be ripped along contour? Explain how "ripping" of compacted soils would be conducted? Explain how steep slopes would be "disced". What is meant by "suitable plant growth material"?

Soil Amendments: Describe how and where test plots would be developed and during what stage of the reclamation process? What would be the size and number of the plots? What is

the fertilization plan? What types and amounts of fertilizers would be applied on the different plots? How would the fertilizers be applied? Monitoring of the test plots should be incorporated into the Monitoring Plan.

Surface Manipulations: Explain how topsoil would be disced or harrowed. For what slopes would it not be feasible for discing or harrowing? What procedures would be conducted on steep slopes to prevent erosion, to prepare the soil, and to establish vegetation? It is stated that pitting is a commonly used method for preparing the soil surface. Where has this method been tested and has pitting proven to be successful? How would pits be constructed? Explain how pitting would be accomplished by the "sheep's foot implement.

Seed Mixtures and Seeding Methods: What alternative species would be used for seeding? Why would it not be possible for seeding to occur within two weeks of soil preparation? If seeding is not possible within two weeks, would it not be more beneficial to prepare the soils for seeding again rather than taking the stated measures to prevent erosion? Plowing the soils into rows would be counter productive to preparing the soils for seeding. Explain how broadcast seeding is conducted. On page A-9 in the 2nd paragraph on the reasons for broadcast seeding it is stated that broadcast seeding, followed by raking or chaining to cover seeds, distributes seeds to a wide range of depths in the soil. But then the last paragraph on page A-9 states that seeded areas will not be raked because any vehicular traffic will destroy the pitted surfaces. Explain this contradiction.

Monitoring Plan

Air: Where would monitoring stations be located? How would PM emissions and fugitive dust be measured?

Soils: How would soils be monitored to determine if excessive erosion is occurring beyond natural erosion rates? All efforts should be made to contain the soil on site so monitoring should consist of inspecting the erosion control devices. For instance, berms should be placed around the base of topsoil stockpiles to prevent erosion and monitoring should include checking for breaks in the berms.

Noise: What is the purpose of the noise monitoring? Would the noise from operations be kept below certain levels to minimize impacts to wildlife or recreationists? If noise levels were exceeded what mitigation measures would be taken?

Vegetation: Premining transects to determine vegetative cover should be conducted. The BLM must also accept that revegetation has been satisfactorily completed. Define the years immediately prior to bond release with regard to quantitiative sampling. How does the submission of annual reclamation reports to BLM ensure timely and successful reclamation? How would monitoring of the test plots be conducted?

TECHNICAL REPORT - Chapters 3, 4, & 5

Chapter 1 - Define the proposed project study area. This area involves 1,800 acres of public lands when the proposed access road and quarry site involve 107 acres?. How was the

proposed project area selected? The Federal action for the proposed action would be the approval of a Plan of Operations to develop the access road and quarry on Federal lands.

Purpose and Need: Why is U.S. Gypsum's safety record relevant to the purpose and need of the project? What were the results of the drilling conducted within the entire project area which led to selecting the proposed quarry area? Were there any other potential quarry sites? In Chapter 2, Nature of the Gypsum Reserves, it is stated that "the data indicate there is a quality gypsum resource in excess of 40 million tons, covering about 1,600 acres in the project study area. Also, in Chapter 4, Proposed Wilderness Lands, it is stated that "it could be possible to avoid direct impacts to the Devil's Canyon Unit if mining were to begin in the areas south of Kimball Draw. Is there a potential alternative quarry site within the proposed project area south of Kimball Draw?

Conformance with Land Use Plans: Conformance with land use plans with the State of Utah must be addressed. Table 1.4 requires modification due to the offset of Western Clay not beginning production in 1997. The changes are as follows:

	New (acres)	Total Estimated Disturbance (acres)
1997	4.5	70.5
1998		85
1999		90
2000	7.0	97
2001	5.8	102.8

Chapter 2 - Chapter 2 was reviewed as a part of the Plan of Operations.

Project Overview: BLM would not issue a right-of-way. The proposed access route would be included with the Plan of Operations.

Chapter 3 - Change the title from "Existing" to "Affected" Environment.

Climate: Are the winters "warm or cold"? The statement that the proposed action would not impact climate is an unsubstantiated claim. Needs detailed and quantified analysis to demonstrate that climate would not be altered. What about "microclimate"? Huntington, Utah has more days of sunshine than any other location in Utah. Would additional dust affect the microclimate of the San Rafael area?

Air Quality: Use the official definition of PSD Class I and II. What is the baseline of criteria pollutants that may be emitted by the project?

Geology: The San Rafael Swell is the main geologic feature in the area and should be discussed in detail. The structure has a major influence on watershed and drainage in the area. What geologic formation would be quarried. Describe the Navajo Formation and that it is a potential aquifer.

Mineral/Oil and Gas Resources: The project area has a low potential for development but a high potential for uranium occurrence. The distinction between the presence of a mineral and the potential for economic recovery during the life of the project should be explained. Explain why there is a low potential for uranium development, i.e. depth of deposits, uranium prices, etc. Is there any potential for limestone development in the Carmel Formation? Has limestone been developed from the Carmel Formation in other locations? Explain why the project area has a moderate potential for oil and gas development. Are there any mineral leases or permits in the project area?

Geologic Hazards: Aren't the local drainages prone to flash flooding?

Paleontological Resources: What are important fossils?

Soils: The soils for the access road and quarry should be described by type and percent? The overall percentage of the project area with poor suitability for rangeland seeding should be provided. The difference between suitability for rangeland seeding and reclamation of soils and vegetation should be explained. There can be poor suitability for seeding but high suitability for restoration of vegetation on site? There is an inconsistencey in the explanation of the current rate of soil loss. On page 3-10, second paragraph, soils are described as "well stabilized in most areas", and then goes on to say there is "accelerated soil loss". The inconsistency could be clarified by adding quantification. Is erosion accelerated on 10 or 50% of the project area? What is the source of the information? What is the present rate of soil erosion for the project area?

Surface Water: The affected watershed is listed as 12,000 acres. How was this determined? What percent of the watershed is included in the project area? What portion of the project area is in the Kimball Draw watershed and adjacent other watersheds? A detailed description of surface flow and drainage of the area is necessary. Surface flow would run into the smaller entrenched arroyos which flow in what direction into Kimball Draw or Devil's Canyon. These drainages flow westerly into Muddy Creek. Muddy Creek flows in a southeasterly direction across the southern portion of the San Rafael Swell into the Dirty Devil River and so on. How far downstream of the proposed quarry site is the Muddy Creek gauging station? The condition of the streams to be crossed by the access road should be addressed. Page 3.23 states that the Upper Kimball Draw Seep is an important source of water in the project area. Why is the seep not discussed in the water resources section? What are point-to-point stockwatering permits? Are stockwatering permits water rights? How many acre-feet of water are granted by the "permits"? What percent of the water is committed? The State classification, beneficial use rating and current concentrations of criteria pollutants that would be emitted by the project should be presented as the baseline for analysis of impacts from the project. Who utilizes water from the project area for dust suppression and limited irrigation? How much water is utilized for these purposes? Is the topography of the project area "rugged and steep"? A detailed discussion of the topography should be included in the Geology section.

Groundwater: How deep was the exploration drilling which was conducted and what geologic formations were tested? Were the Entrada and Navajo Formations in the project area tested by the exploration drilling? Did the holes reach the bottom of the proposed quarry? How deep is the shallowest aquifer? What information is available on groundwater in the Navajo

Formation in this area. References on the Navajo aquifer include 1) Hydrology of the Navajo Sandstone in Southeastern and Southern Utah by Paul J. Blanchard, 1988 2) Ground-Water Flow in the Navajo Sandstone in Parts of Emery, Grand, Carbon, Wayne, Garfield, and Kane Counties, Southeat Utah by Emanuel Weiss, 1987 3) The Navajo Sandstone a Regional Aquifer by James W. Hood, 1980. There is an important seep; how is it related to groundwater in the project area? This information could be important to an analysis of potential leaching of chemicals from release of toxic or hazardous chemicals. More detailed infromation is necessary regarding the well north of I-70 to be utilized for the project: 1) who drilled the well? 2) when was the well drilled? 3) what is the water from the well utilized for? 4) how much water is permitted? 5) what percent of the water is committed? 6) what information is available about water quality or water flow from the well?

Noise: Who did the noise study? Are the 15 locations in the project area? What caused the high level of noise that weren't related to gusts of wind? What percent of the time are there high noise levels in the project area? How far does sound travel in this setting?

Vegetation: Which "area" is referred to in the first sentence? The vegetation in the quarry and the access route should be specifically described by type and percent. Thoroughly explain how community types are controlled by topography, geology, and soils? Page 3-11 mentions a wetland, but no riparian or wetland vegetation is mentioned here? Where is the vegetation in Table 3.3 located? Why isn't the pinyon-juniper community included on Table 3.3. Who conducted the vegetation surveys in 1996?

Threatened and Endangered Plant Species: This section describes more than T&E species. A good name would be "Special Status Plant Species". Where is the Tea Bush Flats area? The 2 locations of cactus populations should be shown on a map. Is the discussion of principal plant species growing in association with the cactus consistent with the discussion of plant communities discussed in the Vegetation section?

Raptors: Cumulative impacts on raptors is a sensitive issue for the Fish and Wildlife Service. This section needs more data on the number and location of nests, roost trees. etc. It should explain the percent of the project area inventoried, prey-base relationship to plant communities, etc.

Mammals: Were there any on-site inventories? Are there dens, cover stands of vegetation, or other important habitat components in the project area? If not, make a negative declaration.

Birds: More data is needed on habitats that may be important to birds. Has there been an on-site inventory for birds? Are there any leks, cliffs, trees, water sources (e.g. seep) etc. in the project area? If not a negative declaration should be made. On page 3-11 it is stated that water in a large barrow site is utilized by waterfowl and other wildlife.

Amphibians and Reptiles: How many "limited water habitats" are there in the project area? Where are they located? Are they in the area that would be quarried? Are they in the route for the access route?

Fish: Why are no fish species "likely" to occur? Are there permanent water sources in the project area or not? State whether fish occur within the project area or not.

Wild Horses: What percentage of the Muddy Creek Herd Management Area is within the project area? Has the 1998 roundup of wild horses been completed?

Threatened and Endangered Animals: Has BLM initiated informal consultation with FWS? Have on-site inventores been done for roosts, nets, etc. Why are peregrine falcon and black-footed ferret unlikely to be affected by the proposed action? Explain why mining is unlikely to affect fish habitat in the Colorado River. Why are bighorn sheep "not likely" to be impacted if noise from the project would travel "a few miles". Would the noise affect the sheep.

Cultural Resources: Who conducted the inventory? Has consultation with SHPO been initiated? Is a cultural resources protection plan in progress? Are the two identified sites located along the access route or in the quarry area?

Land Use: This section should be under conformance with land use plans? What division of the State administers the "State" land in the project area. Is this SITLA administered or Division of Lands and Forestry? What State and County Plans cover the project area? The objectives and prescriptions of the plans should be described. Are there state leases for grazing, mineral extraction, etc. on the State lands? What is the County Commission policy for use of the land?

Livestock Grazing: What percentage of the allotment is within the project area? How many AUMs are allocated to the project area? What class of livestock is grazed in the project area? How many permittees hold permits that could be affected? (Note: Are the permittees listed in the consultation and coordination section and will they be sent copies of the EIS?).

Recreation: What is the San Rafael Extensive Recreation Management Area and how is it managed for dispersed recreation? What is meant by 70% of the visitors reside in the "region"? Just because an area has only dispersed recreation it does not necessarily follow that there is minimal need for user conflict resolution. The question is how many people use the area and what are their expectations. If the quarry site is a dispersed camping and OHV traditional use area, there may be large user conflicts during the peak use period in the spring. How is the project related to the San Rafael OHV plan?

Land Status and Prior Rights: This discussion should be placed in a section on Relationship to BLM and Non-BLM Policies, Plans, and Programs under Chapter 1.

Wilderness: How many acres and what percent of the Devil's Canyon WSA is within the project area? Add BLM before actual WSAs to avoid confusion with the UWC WSAs in HR1500.

Visual Resources: On page 3-33, last paragraph, remove "original environmental assessment". Rather than using the term value, define management classes by stating Classes I and II have the highest visual ratings and are the most restrictive for any proposed surface disturbing activity. Class III allows moderate changes to the landscape. Class IV is the lowest rating and the least restrictive to any proposed surface disturbing activity.

Chapter 4 - Environmental Consequences

A new heading of "Analysis Assumptions and Guidelines" should precede the first paragraph.

Where are the BLM required mitigating measures described? The statements throughout this Chapter on no mitigation above and beyond the applicant committed..."would be necessary" should be changed to "have been identified". To judge that something is necessary or unnecessary is a value judgement that can be argued with. Simply state that we know of no other mitigation measures to reduce impacts.

Does the anlysis account for all recommended mitigation or only the applicant proposed? If only the applicant proposed mitigation applies, then a new unavoidable adverse impacts section should be prepared.

The analysis should go beyond the 66 acres of disturbance at any one time and account for all of the impacts from disturbance over the life of the mine.

The RFD scenario for cumulative impacts should include all types of action and activities that would interact with the proposed mine to create environmental consequences, not just other gypsum mines and rights-of-ways. For example, would coal bed methane development create cumulative impacts on public safety from increased traffic, cumulatively interact in generation of fugitive dust, or in the consumption of water?

Air Quality: The Utah Division of Air Quality has opacity standards that must be met when fugitive dust is created. The standards should be discussed and the impacts of the project compared to the standards. Need to compare potential emissions to NAAQS and PSD standards, showing the baseline, anticipated increase and anticipated concentrations. Need a negative declaration on impacts on the closest PSD Class I areas, Capital Reef and Canyonlands National Parks. As written, this section is full of unfounded conclusions.

No Action - The assumptions are that other gypsum mines would continue operations and would possibly expand, traffic on I-70 would increase, population in the local area would continue to increase etc. even if the project is not approved. The No Action alternative should analyze the future without the project. Would air quality continue to decline even if the project is not approved? The addition of the No Action and the Proposed Action is the cumulative impact.

Mineral Resources: It was not mentioned in the Affected Environment that there are no active mineral leases within the project area. The impact should be on the recovery of the mineral, not the mineral itself. A reserve is defined as a mineral that can be economically extracted. There are different mineral resources within the project area but no resrves because they can not be extracted economically. Explain why the minerals can not be economically extracted. Is it low price, high cost of recovery in this area, lack of transportation, low market demand or what? Cite sources for the information. For gypsum depletion, what percent of the Utah, and national gypsum reserves would be depleted? The last sentence on demonstrated need for the gypsum should be discussed in purpose and need. If pertinent, an analysis of the impact of reduced availability of gypsum on other resources, such as the wall board industry or

cement industries should be analyzed in the section on impacts to social and economic conditions. Placing this sentence in this analysis is self-serving and out of place.

No Action - More detail is needed and an assumption on where the gypsum would come from should be made. This is important, because not approving the project could actually lead to more impacts than approving the project if the alternative sources would actually create more environmental consequences than the proposed action.

Soils: This section needs quantification in the analysis to be meaningful. What are "critical soils"? What is the potential for reclamation (from Chapter 3); how long would it take to reestablish vegetation? Explain how soil disturbance would result in accelerated erosion. When and where would erosion occur? Would erosion occur when the vegetation is removed, when the soil is removed and stockpiled, or when the soil is replaced and before vegetation and microbiotic crusts are reestablished? Where would the "lost" soil go? How much soil would be lost? Would there be off-site impacts that should be cross-referenced to analysis on other resources (e.g. Water and Air Quality- would the sediment load in the San Rafael, Green, and Colorado Rivers and by how much etc.)? The related water and air quality analyses should be cross referenced in this section. If soils in the area are not productive now, is it important that they would be "less productive"? What wouldn't be produced? The impacts should be carried out to demonstrate an impact on the "human environment". How would the erosion control practices prevent soil loss?

No Action - Provide details of how off-highway vehicles and livestock grazing would impact soils.

Surface Water: How would increased sedimentation be caused? How many additional tons of sediment per year would reach the drainages? How much additonal salt would reach the Green and Colorado Rivers? Would there be a measurable change in the salinity of the Colorado River at Lee's Ferry? When would accelerated erosion and increased sedimentation occur and how long would it last? Explain how the proposed mitigation would result in negligible increased sedimentation within the watershed?

No Action - Provide details on how off-highway vehicles and livestock grazing would impact surface water.

Groundwater: Provide details of how quarrying activities would not cause any impacts to the underlying Navajo Sandstone aquifer. How much water would be withdrawn annually from the well located north of Exit 105. The impacts from the water extracted from the well have not been adequately addressed? The water extracted from the well may be minor on a regional level but locally there could be impacts to other users and nearby springs. Chapter 3 should address whether water in the well is replenished or recharged and whether the depth of the water in the well has increased since the well has been drilled? What would be the impacts of removing water from the existing source at Sigurd?

No Action - What would be the impacts of continuing to remove water from the well at existing levels of use?

Noise: Chapter 3 should state how many miles noise travels from the quarry site. Why would noise "rapidly deminish"? Chapter 4 should state how far noise from the project could be heard and at what levels. What would be the increase in noise level due to different operational activities such as topsoil and overburden removal, blasting, gypsum mining, and reclamation? When would increases in noise level occur and what would be the duration?

Vegetation: How would vegetation be disturbed? How much vegetation would be disturbed by road development and quarry development? What type of vegetation would be disturbed? Are the plant communities that would have altered composition common or special? Would the overall aspect of the vegetation remain the same, i.e. would desert shrub be converted to grassland? The potential for reclamation should be referenced and used in the analysis.

No Action - Provide details of how off-highway vehicle use and livestock grazing would continue to disrupt vegetation. How much of the vegetation is the area has been disrupted?

Wetlands: Wetlands are discussed in the Surface Water section of Chapter 3 and in this section it is stated that no wetlands occur in the project area.

Microbiotic Crusts: What are the "impacts" due to a loss of organisms? What would be the impact on the human environment? To what degree and on what percent of the project area would the crusts be disturbed? The potential for reclamation should be referenced in the analysis.

No Action - Provide details of how off-highway vehicle use and livestock grazing would continue to disrupt microbiotic crusts. How much of the microbiotic crusts in the area have been disrupted?

Threatened and Endangered Plant Species and Species of Special Conern: The U.S. Fish and Wildlife determination should be included in the appendix. This section should be consistent with Chapter 3. The cactus species *Pediocactus winkleri* is not mentioned in Chapter 3. Also, there are 28 individuals of fishook cactus mentioned in Chapter 3 but in the impact analysis it is stated that 25 individuals would be lost. Would mitigation include planting fishhook cactus in the soil that is saved in waterproof bags? What is the purpose of saving the soil?

No Action - Provide details of how off-highway vehicle use and livestock grazing would continue to disrupt the fishook cactus. How many fishook cactus have been disrupted?

Weeds: What type of weeds would be anticipated in the disturbed areas before the Company committed mitigation? What percentage of the revegetation would consist of weeds?

No Action - Provide details of how off-highway vehicle use and livestock grazing would continue to cause weed investations. How much area is currently infested by weeds in disturbed areas?

Big Game, Raptors, and Other Wildlife Species: Explain how the project "may cause small amounts of game mortality but would not affect population stability"? Foraging habitat for raptors is not discussed in Chapter 3 so the analysis in Chapter 4 is meaningless. How would

the proposed operation result in the potential mortality to other wildlife species? Why would the applicant committed practices result in negligible impacts to other wildlife species?

No Action - What impacts to wildlife are occurring?

Wild Horses: Why would the horses be displaced from approximately 5,000 acres during quarrying operations? In Chapter 3 it is stated that water strongly influences the distribution of horses throughout the Management Area and that the Kimball Draw seep and the Devil's Canyon Spring are used extensively by wild horses especially during dry periods. Therefore, why wouldn't disruption of these two important water sources have a major impact on the wild horses?

No Action - What impacts would continue to occur to the wild horse population in the Management Area?

Ferruginous Hawk - No Action Alternative: What impacts to hawks would occur without gypsum quarry development?

Cultural Resources: The statement that "direct impacts to cultural resources would occur if project activities result in the loss or destruction of cultural resources which are eligible for the National Register of Historic Places" is confusing and misleading. Explain what is meant by "since the study area has a very low density of mostly ineligible cultural reource sites, impacts would be negligible". Does this mean that cultural sites would be destroyed by the operation?

Livestock Grazing: What is meant by "the permit would not be reduced"?

For the No Action Alternative, why would there be no impacts due to a loss of forage? For the section on vegetation it is stated that off-highway vehicle use and livestock grazing would continue to disrupt vegetation? Explain.

Recreation: Define - the vicinity of the quarry site, vicinity of the quarry area, nearby areas, near the quarry site, the area, high places, in the vicinity, western portions of the Devil's Canyon WSA near the quarry, in the vicinity of the quarry, throughout the area, in and adjacent to the quarry area, project study area, undeveloped areas nearby, and the southwestern San Rafael Swell.

Wilderness Study Areas: Explain "very slight increases in noise and occasional slight decreases in air quality". How far and at what levels would noise and dust extend into the WSA? When would the impacts from noise and dust occur and what would be the duration?

Proposed Wilderness Lands: "Human presence" would also invclude recreational users. Why are the indirect impacts unlikely to extend for more than a few miles because of the dissected landscape? Is it reasonable to state that the reclaimed quarry site would erase the evidence of the impacts of humans and this area could be considered for wilderness designation? Explain how the landscape would screen the quarry from "most adjacent areas" and ambient noise levels would mask "most quarry-associated noise". Why is mining in areas south of Kimball Draw being discussed? What areas? Is this an alternative to be considered? Would

there be any "direct effects on the proposed wilderness lands that are adjacent to the site"? What is the "site"? Provide an assessment of the effectiveness of the mitigation.

No Action - Wouldn't human related disturbance continue in the Devil's Canyon Unit related to off-highway vehicle use, cattle grazing, etc.? Congressional action to designate the Devil's Canyon Unit would not prevent any development of the proposed quarry site by U.S. Gypsum because the mining claims would be "grandfathered" and subject to "valid existing rights". Refer to the BLM Interim Management Policy for WSAs.

Visual Resources: Is Key Observation Point 1 at Exit 205 or at Exit 105 as referred to in Figure 4.1? Is U.S. Gypsum avoiding visible areas or not as part of the proposed action?

Unavoidable Adverse Impacts: How would there be "additional" damage to paleontological and cultural resources which may occur? In Chapter 3, paleontological resources are identified in the project area. Explain how the project area has been surveyed for cultural resources but very little loss is anticipated. Discuss how many total acres of surface disturbance would occur rather than surface disturbance at any one time. After the mitigation measures, what would be the residual impacts? The disturbed areas could not be returned to the original topography. There would be a depression left in the quarry area after reclamation. How would the reestablished vegetation compare to the surrounding undisturbed vegetation? There would be increases in emissions and noise levels during the life of the project. There would be an increase in truck traffic along I-70. There would be impacts on recreational users which could not be mitigated. How much soil would be lossed? Even after reclamation is completed, the disturbed areas within the proposed wilderness lands could not be considered for wilderness designation.

Chapter 5

Cumulative Impacts: There are many other land uses administered by the Price Field Office such as recreation, cattle grazing, oil and gas development, coal bed methane development, and coal development. What is the "area"? All current and projected uses and projects should be analyzed which impact resources in the "area". However, the "area" will change based on the resources which are impacted by the proposed project. Are all existing and planned gypsum mines located within T 22 S, R 8 E? Why was this area selected?

Air Quality: What is the "region"? What are the existing and projected land uses in the "area" which would cumulatively add to the impacts of air qulaity?

Cultural and Paleontological Resources: What are the current and projected land uses in the "area" which would have a secondary impact to cultural and paleo resources? Primary impacts are usually prevented by surveys and avoidance/mitigation. Secondary impacts to these resources occur from the construction and improvement of roads which increase access and visitation to the sites

Soils, Vegetation, and Microbiotic Crusts: What is the total amount of disturbance attributable to the proposed project? What is the total amount of disturbance attributable to all land uses? What is the area being addressed by cumulative impacts?

Big Game and Raptors: Why is habitat disturbance compared to the entire area in the San Rafael RMP? The habitat area needs to be defined. What is the habitat loss due to all land uses? Is fragmentation of the habitat occurring from the current and projected land uses? Would the cumulative impacts to the habitat have an impact on a herd unit?

Wild Horses: How were the numbers (acres) on the cumulative development derived? What would be the cumulative impact to water sources. How many water sources are available in the Management Area? What percentage of the water sources would be impacted? How does the elimination of water sources impact the viability of the herd?

Threatened and Endangered Species: Has the FWS identified the existing and projected land uses which would cumulatively impact the fishook cactus? Would the coal bed methane projects have an impact on fishook cactus?

Livestock Grazing: What are the cumulative impacts to livestock grazing for the Allotment? What is the total loss of AUM's for existing and projected land uses in the allotment? Would these impacts result in a reduction in the number of cows?

Recreation: What are the cumulative impacts of all current and project land uses on the Devil's Canyon WSA and the adjacent Proposed Wilderness Lands?

Visual Resources: What are the cumulative impacts to visual resources from the key observation points?

Traffic: Would coal bed methane development contribute to the cumulative impacts of truck traffic along I-70?